

**VOTAW PRECISION TECHNOLOGIES, INC**  
**13153 LAKELAND ROAD**  
**SANTA FE SPRINGS, CA 90670**  
**REGISTERED TO ISO 9001:2000 + AS9100**

**Summary Sheet**

- ❖ Quality and Precision Machining excellence since 1963
- ❖ 240,000 square feet under roof
- ❖ 35 Ton crane capacity with 32 feet under hook
- ❖ Precision Tooling – Machining and Fabrication and Machined Components
- ❖ Prototype (one of a kind) Machined and/or Fabricated Items
- ❖ Full Production Capability
- ❖ Very large to very small Machining and Fabrication capability
- ❖ Quality System – AS9100, D1-9000, MIL-I-45208A, A.I.S.C, with ASQC Certified Inspector
- ❖ 3, 4, 5 & 6 Axis Horizontal and Vertical Boring Mills with up to 50 foot length or 22 foot in diameter
- ❖ Full Service Design Department Specializing in Tooling and Special Machinery for the Aerospace, Launch Systems and Aircraft Industry
  - Stress Analysis (including FEA) – Hydraulic and Pneumatic Systems
- ❖ CAD/CAM Systems included CATIA, Unigraphics II, Pro/Engineering
- ❖ Inspection performed in-house and on-site utilizing Laser and CMM 200”X, 100” Y, 72” Z also a 14ft. x 14ft. Granite Surface Table
- ❖ Complete Fabrication Facility with Certified Welders, NDT, ASME, ASIC and a licensed State Certified Welding Inspector on staff

**More information can be obtained by contacting**

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## EQUIPMENT LIST

### 5 AXIS CNC VERTICAL BORING MILL

- (X-1) Nicolas Correa 5 Axis Vertical Gantry  
X = 197", Y = 128", Z = 40"  
A = +100/-90° C = +/- 200°  
Between Columns – 106", Under Rail = 66"  
Spindle Motor 50 HP, Spindle Speed 4000 RPM
- (X-2) Cincinnati Milacron 5 Axis Vertical Spindle  
**NEW** X = 120", Y = 28", Z = 24"  
A & B = 54° included
- (X-3) Cincinnati 30V 5 Axis Vertical Gantry  
**NEW** X = 490", Y = 84", Z = 22"  
A + -25° B = - 25°
- (X-4) Cincinnati 3 Spindle 5 Axis Vertical Gantry  
**NEW** X = 776", Y = 168", Z = 22"  
A – Axis +20° B – Axis +- 20°  
45" Under Rail
- (X-5) Omnimil X5  
X = 48", Y = 44", Z = 47.5"  
A = -26° + 124.5°, C = 360°
- (X-7) Viper 5 Axis Gantry Machining Center  
**NEW** X = 160", Y = 102", Z = 37"  
Z – Axis – 30°, A – Axis – 35°, B-A  
32" Under Rail
- (X-8) SNK 5-Axis Gantry  
X=50", Y = 15", Z = 60"  
B - +105 to -65°  
C - +/- 190°

### 4 AXIS CNC HORIZONTAL BORING MILL

- (H-1) DeVlieg 5" Spindle  
X = 144", Y = 72", W = 22"  
Fully Programmable Rotary Table
- (H-2) Lucas 6' Spindle  
X = 154", Y = 120", Z = 49", W = 72"  
Fully Programmable 86"x72" Rotary Table  
Fully Programmable 2 Axis Knuckle Head  
Fully Programmable 48" Rotary Tilt
- (H-3) Lucas 6"  
X = 120", Y = 96", Z = 46", W = 72" with a  
Fully Programmable 86"x72" Rotary Table
- (H-4) Lucas 5"  
X = 106", Y = 72", Z = 38", W = 48"  
Fully Programmable Rotary Table

### 4 AXIS CNC HORIZONTAL (continued)

- (H-5) Lucas 5' Spindle  
X= 106", Y = 72", Z = 38", W = 48"  
Fully Programmable Rotary Table
- (H-9) Toshiba 4" Spindle  
X = 78", Y = 52", Z = 51", W = 24"  
Fully Programmable 55"X63" Rotary Table
- (H-10) Mitsubishi 8" Spindle Floor- Type  
X = 472", Y = 136", Z = 43", W = 36"  
Fully Programmable 86"X86" Rotary Table  
with an IN and OUT travel of 86"
- (H-11) Toshiba  
X = 78", Y = 84", W = 43"  
2 24" 70" x 62" Rotary Index Table
- (H-12) Cincinnati  
X = 99", Y = 59", Z = 24"
- (H-13) Cincinnati 4 Axis  
X = 100", Y = 42", Z = 39"  
B Axis = 360°

### HORIZONTAL MACHINING CENTER

- (CNC-1) Okuma MC - 80H CNC Pallet Type  
X = 43", Y = 39", Z = 32"  
Rotary Table 32"X32"  
70 Position Automatic Tool Changer  
with an Electric Probe Gaging System

### HORIZONTAL BORING MILLS - CONVENTIONAL

- (H-6) DeVlieg 4" Spindle  
X = 120", Y = 72", Z = 20", W = 20"
- (H-7) DeVlieg 4" Spindle  
X = 72", Y = 43", Z = 20", W = 20"
- (H-8) Mitsubishi 4" Spindle, **Floor Type**  
X = 348", Y = 117", Z = 45", W = 103"  
Rotary Table 168"X168"

### PLANER MILL

- Ingersol  
2 – Vertical 50 H.P. Head  
1 - Horizontal  
X = 348", Y = 103", 60" Under Rail

## EQUIPMENT LIST

### BRIDGEPORT MILLS

- (24) Bridgeport  
X = 48", Y = 12", Z = 6"
- (1) Bridgeport 3 – Axis NC  
X= 48", Y = 12", Z = 6"

### CNC – VERTICAL BORING MILLS

- (V-1) Shibaura CNC Controlled  
216" Swing, 111" Under Rail  
**268" Max. Swing**
- (V-2) Shibaura CNC Controlled  
216" Swing, 92" Under Rail
- (V-3) Shibaura CNC Controlled  
163" swing, 94" Under Rail
- (V-4) RD & D CNC Controlled  
116" Swing, 90" Under Rail
- (V-5) King CNC Controlled  
120" Swing, 96" Under Rail
- (V-8) Shibaura CNC Controlled  
180" Swing, 130" Under Rail
- (V-11) Betts CNC Controlled  
163" Swing, 94" Under Rail  
190" Swing, 50" Under Rail

### CNC VERTICAL BORING MILL WITH LIVE SPINDLE

- (V-7) You Ji Cyclone VTL -1600  
Maximum Swing: 78.7"  
Maximum Turning Diameter: 71"  
Maximum Cross Travel (X Axis): -31.5"; + 40"  
Maximum Longitudinal travel (Z Axis): 47.2"  
Ram distance to table (max/min):83.4" / 0"

### CNC - LATHES

- (L-1) Okuma LH50 CNC Controlled  
36" Swing, 168" Between Centers
- (L-3) American Lathe CNC Controlled  
120" Swing, 480" Between Centers  
(450" Travel)

### CONVENTIONAL - LATHES

- (L-2) Tuda  
48" Swing, 432" Between Centers  
with Tracer
- Le Blond – Gap Lathe  
35" Swing, 162" Between Centers  
59" Swing, 24" Gap
- Le Blond  
24" Swing, 144" Between Centers
- Le Blond  
19" Swing, 96" Between Centers
- Le Blond  
15" Swing, 72" Between Centers  
with Tracer

### GRINDERS

Blanchard 22K  
46" Diameter X 24" Under Wheel

Tool & Cutter Grinder  
14" X 48"

Surface Grinder  
14" X 48"

Surface Grinder  
14" X 48"

## **EQUIPMENT LIST**

### **WELDING MACHINES**

- Mig Welders  
(10) 250 To 650 Amp  
with Variety of Attachments
- Automatic Heliarc  
(1) Airco and Miller
- Manual Heliarc  
(6) Airco and Miller
- ARC Welders  
(6) Airco and Lincoln Electric
- Sub Arc Welders  
(5) Lincoln and Linde with Wire Feed

### **BURNING MACHINES**

- (1) Health Electric Eye Cutting Machine
- (2) Airco Radiograph Cutting Machines
- (7) Portable Burning Unites
- (1) Hyperterm Max 200 Plasma Cutting Machine  
Cuts up to 3" thick material
- (1) Pullmax Beveling Machine  
(Nibler)
- (1) Piranha Iron Worker

### **WATERJET**

- (W-1)** (1) 50hp Pump  
(1) Bulk Feed Hopper 96"X48"X36"  
X Axis – 212", Y Axis – 160"
- (W-2)** (1) 50hp Pump  
X Axis – 120", Y Axis – 72"

### **WELD MANIPULATOR**

- (1) Aronson Sub Arc  
168" X 168"
- (1) Aronson Sub Arc  
120" X 120"

### **ROLL FORMING**

- (1) 700 Ton Single Stroke Press  
45" Stroke, Y=96" (120" Between Columns)
- (1) Pullmax SMT Kumla  
Plate Rolls 1" X 120"
- (1) Pullmax SMT Kumla  
Angle Rolls 1" X 6" X 6"

### **CUT-OFF SAW**

- (1) Event Abrasive 22" Saw
- (1) Mercury Radial 16" Saw
- (1) WFU Ellis & Son Cut-Off Saw
- (1) Trenn Jaeger Saw  
Model LPC 110/400
- (1) Amada Cut-Off Machine
- (2) Do All Band Saws
- (1) Marvel Saw  
NEW Series 8 Mark III  
16'4"

### **WELD POSITIONERS**

- (1) 50,000 Lbs. Aronson
- (1) 24,000 Lbs. Aronson
- (1) 5,000 Lbs. Sciaky
- (1) Hydrapower  
Press Brake  
30 Ton

# EQUIPMENT LIST

## DESIGN ENGINEERING / NC PROGRAMMING

### 10 WORK STATIONS

#### **2 DELL PRECISION 690**

Dual Quad Core Processors  
8GB Ram  
Giga Bit Network Card  
Dual 24" Ultra Sharp Flat Panels  
Nvidia Quadro 512mb Graphics Card  
MS XP Pro 64 bit OS  
MS Office 2007 Pro

#### **5 DELL PRECISION 650**

Dual 2.8 GHX Xeon Processors  
2 - 4 GB Ram  
Giga Bit Network Card  
20" Ultra Sharp Flat Panel Monitor  
Nvidia Quadro 4-64MB Graphics Card  
MS XP Pro OS  
MS office Pro

#### **3 IBM INTELLISTATION POWER 265**

1 Way 450MHZ Power II Processor  
1GB Ram  
Giga Bit Network Card  
Dell 20" Ultra Sharp Flat Panel Monitor  
Power GXT 4500P Graphics Card  
AIX 5.1 OS

### PLOTTER & PRINTING EQUIPMENT

**OCE TDS400 WIDE FORMAT NETWORK PRINTER – (UP TO 36")**  
**HP DESIGN JET 1055C WIDE FORMAT NETWORK PLOTTER – (UP TO 36")**  
**HP DESIGN JET 750C WIDE FORMAT NETWORK PLOTTER – (UP TO 36")**  
**HP COLOR LASERJET 5500 & 5550 NETWORK PRINTERS**

### DESIGN & PROGRAMMING SOFTWARE\*

**CATIA V5 – R8 through R19**  
**CATIA V4 – 4.2.2 and 4.2.4**  
**UNIGRAPHICS – NX and NX2 – NX6**  
**PRO/ENGINEER – 2001 and Wildfire**  
**MASTERCAM – 9.1, X**  
**AUTODESK INVENTOR SERIES – 7 and 8**  
**AUTODESK MECHANICAL DESKTOP – 5.0 and 6.0**

### VERIFICATION SOFTWARE

**VERICUT – 5.3 – 6.1**  
**VERISURF – 9.1, X**  
**MASTERCAM – 9.1, X**

### VIEWING SOFTWARE

**5 SEATS - ENOVIA**  
**2 SEATS – NX6**  
**5 SEATS - AutoVue**

\*VPT MAINTAINS ACTIVE SOFTWARE MAINTENANCE ON ALL DESIGN AND PROGRAMMING SOFTWARE. THIS POLICY ALLOWS VPT TO APPLY THE LATEST TECHNOLOGY TO THE CHALLENGING PROJECTS OF OUR CUSTOMERS

## EQUIPMENT LIST

### QUALITY MEASRUNG AND TEST

- |  |   |
|--|---|
| (1) <b>DEA Delta SP Gantry CMM</b><br>X= 200", Y = 100", Z = 72"   | (1) <b>Federal CMM 350</b><br>X= 40", Y = 20", Z = 14"          |
| (3) <b>Leica Laser Tracker System LTD 800</b><br>Capable of single point measurement or surface digitizing accurately in a measurement volume up to 70m diameter | (1) <b>Cadillac 48" Height Gage</b><br>Accuracy +/-0.00005      |
| (1) <b>Federal Coordinate Measurement System</b><br>X = 48", Y = 24", Z = 17"  | (1) <b>Ultradex Model A</b><br>Accuracy .250 Sec. of Arc        |
| (1) <b>Brunson Theodolite – Model TH-20</b>  | (1) <b>Deltronic DH 214</b><br><b>Optical Comparator</b>        |
| (1) <b>Hewlett Packard Laser – Model 5526A</b><br>Accuracy's to +/- .000050<br>Automatic Temperature and Atmospheric   | (1) <b>Mitutoyo Electronic Indicator</b><br>Accuracy .000010    |
| (1) <b>Krautkamen Branson U S L – 42</b><br>Ultrasonic Contact Suspension System   | (12) <b>Dial Bore Gage's</b><br>Up to 12.000"                   |
| (1) <b>Pratt &amp; Whitney Measuring System</b>  | (1) <b>Mitutoyo Profile</b><br><b>Optical Comparator</b>        |
| (1) <b>5 Ton Hydra Set</b>   | (5) <b>Starrett Gage Block Sets</b><br>Accuracy +/- .00050      |
| (1) <b>10 Ton Hydra Set</b>  | (4) <b>Ultrasonic</b><br><b>Thickness Gage's</b>                |
| (1) <b>Hydra-Set Model D Load Cell</b><br>with 40,000 Lbs. Capacity  | (1) <b>Krautkramer Branson</b><br><b>Hardness Tester MIC 10</b> |
| (1) <b>10 Ton Crane Tension Load Cell</b><br>2 lb. increments  | (1) <b>Surfex Surface Finish Gage</b>                           |
|  | (2) <b>Profilometer</b>   |